

## RAW SEQUENCE LISTING

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Application Serial Number: 10/531/357A  
Source: PCT  
Date Processed by STIC: 1-26-06

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PCT

## RAW SEQUENCE LISTING

DATE: 01/26/2006

PATENT APPLICATION: US/10/531,357A

TIME: 09:35:32

Input Set : A:\38-05sequencelisting.txt

Output Set: N:\CRF4\01262006\J531357A.raw

5 <110> APPLICANT: GREEN, Sol Alexander  
6 FRIEL, Ellen Nicola  
7 BEUNING, Lesley Leah  
8 MACRAE, Elspeth Ann

12 <120> TITLE OF INVENTION: Plant alpha farnesene synthase and polynucleotides encoding  
same

16 <130> FILE REFERENCE: 38-05  
19 <140> CURRENT APPLICATION NUMBER: 10/531,357A  
21 <141> CURRENT FILING DATE: 2005-04-14  
25 <150> PRIOR APPLICATION NUMBER: PCT/NZ2003/000229  
27 <151> PRIOR FILING DATE: 2003-10-15  
30 <150> PRIOR APPLICATION NUMBER: NZ 521984  
32 <151> PRIOR FILING DATE: 2002-10-15  
36 <160> NUMBER OF SEQ ID NOS: 14  
40 <170> SOFTWARE: PatentIn version 3.1  
44 <210> SEQ ID NO: 1  
46 <211> LENGTH: 1952  
48 <212> TYPE: DNA  
50 <213> ORGANISM: Malus domestica

54 <400> SEQUENCE: 1

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57 atggaattca gagttcactt gcaagctgat aatgagcaga aaatttttca aaaccagatg	120
59 aaaccggaac ctgaagcctc ttacttgatt aatcaaagac ggtctgcaaa ttacaagcca	180
61 aatatttgga agaacgattt cctagatcaa tctcttatca gcaaatacga tggagatgag	240
63 tatcggaagc tgtctgagaa gttaatataga gaagttaaga tttatatatc tgctgaaaca	300
65 atggatttag tagctaagtt ggagctcatt gacagcgtcc gaaaactagg cctcgcgaaac	360
67 ctcttcgaaa aggaaatcaa ggaagcccta gacagcattg cagctatcga aagcgacaat	420
69 ctcggcacaa gagacgatct ctatgggtact gcattacact tcaagatcct caggcagcat	480
71 ggctataaag tttcacaaga tatatttggt agattcatgg atgaaaaggg cacattagag	540
73 aaccaccatt tcgcgcattt aaaaggaatg ctggaacttt tcgaggcctc aaacctgggt	600
75 ttcgaagggtg aagatatattt agatgaggcg aaagcttcct tgacgctagc tctcagagat	660
77 agtgggcata tttgttatcc agacagtaac ctttccaggg acgtagtcca ttccttgag	720
79 cttccatcac accgcagagt gcagtgggtt gatgtcaa at ggcaaatacaa cgcctatgaa	780
81 aaagacattt gtcgcgtcaa cgccacgtta ctcgaaattag caaagcttaa tttcaacgta	840
83 gttcaggccc aactccaaaa aaacttaagg gaagcatcca ggtgggtgggc aaatctgggc	900
85 ttcgcagaca acttgaaatt tgcaagagat agactgggtg aatgtttctc atgtgctgtg	960
87 ggagtagcat tcgagcctga gcaatcatct tttagaatat gtcttacc aa agtcatcaac	1020
89 ttagtactga tcatagacga cgtctatgat atttatggct cagaggaaga gctaaagcac	1080
91 ttcaccaatg ctggtgatag gtgggattct agggaaactg agcagcttcc agagtgtatg	1140
93 aagatgtggt tccaagtact ctacaacact acttggtgaaa ttgctcgtga aattgaggag	1200
95 gagaatgggt ggaaccaagt attacctcaa ttgaccaaaag tgtgggcaga tttttgtaaa	1260
97 gcattattgg tggaggcaga gtggtataat aagagccata taccaaccct tgaagagtac	1320
99 ctaagaaacg gatgcatttc atcatcagtt tcagtgcctt tggttcactc gtttttctct	1380
101 ataactcatg agggaaacca agagatggct gattttcttc acaagaatga agatcttttg	1440

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103 tataatatct ctctcatcgt tcgcctcaac aatgatttgg gaacttccgc ggctgaacaa 1500
105 gagagagggg attctccttc atcaatcgta tgttacatga gagaagtga tgcctctgaa 1560
107 gaaacagcta ggaagaacat taaggcatg atagacaatg catggaagaa agtaaagga 1620
109 aaatgcttca caacaaacca agtgcctttt ctgtcatcat tcatgaacaa tgccacaaac 1680
111 atggcacgtg tggcgcacag cctttacaaa gatggagatg ggtttggtga ccaagagaaa 1740
113 gggcctcgga cccacatcct gtctttacta ttccaacctc ttgtaaacta gtactcatat 1800
115 agtttgaaat aaatagcagc aagaagtttg cggttcagtt cgtcatggat aaattaatct 1860
117 ttacagtttg taacgttggt gcacaaagat tatgaataaa aagttgtagt ttgtcgttta 1920
119 ttttttaaaa aaaaaaaaaa aaaaaaaaaa aa 1952
122 <210> SEQ ID NO: 2
124 <211> LENGTH: 576
126 <212> TYPE: PRT
128 <213> ORGANISM: Malus domestica
132 <400> SEQUENCE: 2
134 Met Glu Phe Arg Val His Leu Gln Ala Asp Asn Glu Gln Lys Ile Phe
135 1 5 10 15
138 Gln Asn Gln Met Lys Pro Glu Pro Glu Ala Ser Tyr Leu Ile Asn Gln
139 20 25 30
142 Arg Arg Ser Ala Asn Tyr Lys Pro Asn Ile Trp Lys Asn Asp Phe Leu
143 35 40 45
146 Asp Gln Ser Leu Ile Ser Lys Tyr Asp Gly Asp Glu Tyr Arg Lys Leu
147 50 55 60
150 Ser Glu Lys Leu Ile Glu Glu Val Lys Ile Tyr Ile Ser Ala Glu Thr
151 65 70 75 80
154 Met Asp Leu Val Ala Lys Leu Glu Leu Ile Asp Ser Val Arg Lys Leu
155 85 90 95
158 Gly Leu Ala Asn Leu Phe Glu Lys Glu Ile Lys Glu Ala Leu Asp Ser
159 100 105 110
162 Ile Ala Ala Ile Glu Ser Asp Asn Leu Gly Thr Arg Asp Asp Leu Tyr
163 115 120 125
166 Gly Thr Ala Leu His Phe Lys Ile Leu Arg Gln His Gly Tyr Lys Val
167 130 135 140
170 Ser Gln Asp Ile Phe Gly Arg Phe Met Asp Glu Lys Gly Thr Leu Glu
171 145 150 155 160
174 Asn His His Phe Ala His Leu Lys Gly Met Leu Glu Leu Phe Glu Ala
175 165 170 175
178 Ser Asn Leu Gly Phe Glu Gly Glu Asp Ile Leu Asp Glu Ala Lys Ala
179 180 185 190
182 Ser Leu Thr Leu Ala Leu Arg Asp Ser Gly His Ile Cys Tyr Pro Asp
183 195 200 205
186 Ser Asn Leu Ser Arg Asp Val Val His Ser Leu Glu Leu Pro Ser His
187 210 215 220
190 Arg Arg Val Gln Trp Phe Asp Val Lys Trp Gln Ile Asn Ala Tyr Glu
191 225 230 235 240
194 Lys Asp Ile Cys Arg Val Asn Ala Thr Leu Leu Glu Leu Ala Lys Leu
195 245 250 255
198 Asn Phe Asn Val Val Gln Ala Gln Leu Gln Lys Asn Leu Arg Glu Ala
199 260 265 270
202 Ser Arg Trp Trp Ala Asn Leu Gly Phe Ala Asp Asn Leu Lys Phe Ala

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203          275          280          285
206 Arg Asp Arg Leu Val Glu Cys Phe Ser Cys Ala Val Gly Val Ala Phe
207          290          295          300
210 Glu Pro Glu His Ser Ser Phe Arg Ile Cys Leu Thr Lys Val Ile Asn
211 305          310          315          320
214 Leu Val Leu Ile Ile Asp Asp Val Tyr Asp Ile Tyr Gly Ser Glu Glu
215          325          330          335
218 Glu Leu Lys His Phe Thr Asn Ala Val Asp Arg Trp Asp Ser Arg Glu
219          340          345          350
222 Thr Glu Gln Leu Pro Glu Cys Met Lys Met Cys Phe Gln Val Leu Tyr
223          355          360          365
226 Asn Thr Thr Cys Glu Ile Ala Arg Glu Ile Glu Glu Asn Gly Trp
227          370          375          380
230 Asn Gln Val Leu Pro Gln Leu Thr Lys Val Trp Ala Asp Phe Cys Lys
231 385          390          395          400
234 Ala Leu Leu Val Glu Ala Glu Trp Tyr Asn Lys Ser His Ile Pro Thr
235          405          410          415
238 Leu Glu Glu Tyr Leu Arg Asn Gly Cys Ile Ser Ser Ser Val Ser Val
239          420          425          430
242 Leu Leu Val His Ser Phe Phe Ser Ile Thr His Glu Gly Thr Lys Glu
243          435          440          445
246 Met Ala Asp Phe Leu His Lys Asn Glu Asp Leu Leu Tyr Asn Ile Ser
247          450          455          460
250 Leu Ile Val Arg Leu Asn Asn Asp Leu Gly Thr Ser Ala Ala Glu Gln
251 465          470          475          480
254 Glu Arg Gly Asp Ser Pro Ser Ser Ile Val Cys Tyr Met Arg Glu Val
255          485          490          495
258 Asn Ala Ser Glu Thr Ala Arg Lys Asn Ile Lys Gly Met Ile Asp
259          500          505          510
262 Asn Ala Trp Lys Lys Val Asn Gly Lys Cys Phe Thr Thr Asn Gln Val
263          515          520          525
266 Pro Phe Leu Ser Ser Phe Met Asn Asn Ala Thr Asn Met Ala Arg Val
267          530          535          540
270 Ala His Ser Leu Tyr Lys Asp Gly Asp Gly Phe Gly Asp Gln Glu Lys
271 545          550          555          560
274 Gly Pro Arg Thr His Ile Leu Ser Leu Leu Phe Gln Pro Leu Val Asn
275          565          570          575

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278 <210> SEQ ID NO: 3
280 <211> LENGTH: 20
282 <212> TYPE: DNA
284 <213> ORGANISM: Artificial sequence
287 <220> FEATURE:
289 <223> OTHER INFORMATION: Synthetic nucleotide
292 <400> SEQUENCE: 3
293 agagttcact tgcaagctga
296 <210> SEQ ID NO: 4
298 <211> LENGTH: 12
300 <212> TYPE: DNA
302 <213> ORGANISM: Artificial sequence

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305 <220> FEATURE:
307 <223> OTHER INFORMATION: Synthetic nucleotide
310 <400> SEQUENCE: 4
311 ggatgcttcc ct 12
314 <210> SEQ ID NO: 5
316 <211> LENGTH: 20
318 <212> TYPE: DNA
320 <213> ORGANISM: Artificial sequence
323 <220> FEATURE:
325 <223> OTHER INFORMATION: Synthetic nucleotide
329 <400> SEQUENCE: 5
330 gcacattaga gaaccacccat 20
333 <210> SEQ ID NO: 6
335 <211> LENGTH: 676
337 <212> TYPE: DNA
339 <213> ORGANISM: Malus domestica
343 <400> SEQUENCE: 6
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346 aaatcaagga agccctagac agcgttgcag ctatcgaaag cgacaatctc ggcacaagag 120
348 acgatctcta tgctactgca ttacacttca agatcctcag gcagcatggc tataaagttt 180
350 cacaagatat atttggtaga ttcattggatg aaaagggcac attagagaac caccatttcg 240
352 cgcattttaa aggaatgctg gaacttttcg aggcctcaaa cctgggtttc gaaggtgaag 300
354 atatttttaga tgaggcgaaa gcttccttga cgctagctct cagagatagt ggtcatattt 360
356 gttatccaga cagtaacctt tccagggacg tagttcattc cctggagctt ccatcacacc 420
358 gcagagtgca gtggtttgat gtcaaattggc aaatcgacgc ctatgaaaaa gacatttgct 480
360 gcgtcaacgc cacgttactc gaattagcaa agcttaattt caacgtagtt caggcccaac 540
362 tccaaaaaaa cttaagggaa gcatccaggt ggtgggcaaa cctgggcata gcagacaact 600
364 tgaaatttgc aagagataga ctggttgaat gtttcgcatg tgctgtggga gtagcattcg 660
366 agccagagca ctcac 676
369 <210> SEQ ID NO: 7
371 <211> LENGTH: 224
373 <212> TYPE: PRT
375 <213> ORGANISM: Malus domestica
379 <400> SEQUENCE: 7
381 Lys Leu Glu Leu Ile Asp Ser Val Arg Lys Leu Gly Leu Ala Asn Leu
382 1 5 10 15
385 Phe Glu Lys Glu Ile Lys Glu Ala Leu Asp Ser Val Ala Ala Ile Glu
386 20 25 30
389 Ser Asp Asn Leu Gly Thr Arg Asp Asp Leu Tyr Ala Thr Ala Leu His
390 35 40 45
393 Phe Lys Ile Leu Arg Gln His Gly Tyr Lys Val Ser Gln Asp Ile Phe
394 50 55 60
397 Gly Arg Phe Met Asp Glu Lys Gly Thr Leu Glu Asn His His Phe Ala
398 65 70 75 80
401 His Leu Lys Gly Met Leu Glu Leu Phe Glu Ala Ser Asn Leu Gly Phe
402 85 90 95
405 Glu Gly Glu Asp Ile Leu Asp Glu Ala Lys Ala Ser Leu Thr Leu Ala
406 100 105 110
409 Leu Arg Asp Ser Gly His Ile Cys Tyr Pro Asp Ser Asn Leu Ser Arg

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410          115          120          125
413 Asp Val Val His Ser Leu Glu Leu Pro Ser His Arg Arg Val Gln Trp
414          130          135          140
417 Phe Asp Val Lys Trp Gln Ile Asp Ala Tyr Glu Lys Asp Ile Cys Arg
418 145          150          155          160
421 Val Asn Ala Thr Leu Leu Glu Leu Ala Lys Leu Asn Phe Asn Val Val
422          165          170          175
425 Gln Ala Gln Leu Gln Lys Asn Leu Arg Glu Ala Ser Arg Trp Trp Ala
426          180          185          190
429 Asn Leu Gly Ile Ala Asp Asn Leu Lys Phe Ala Arg Asp Arg Leu Val
430          195          200          205
433 Glu Cys Phe Ala Cys Ala Val Gly Val Ala Phe Glu Pro Glu His Ser
434          210          215          220
437 <210> SEQ ID NO: 8
439 <211> LENGTH: 20
441 <212> TYPE: DNA
443 <213> ORGANISM: Artificial sequence
446 <220> FEATURE:
448 <223> OTHER INFORMATION: Synthetic nucleotide
451 <400> SEQUENCE: 8
452 gaaaagttcc agcattcctt
455 <210> SEQ ID NO: 9
457 <211> LENGTH: 20
459 <212> TYPE: DNA
461 <213> ORGANISM: Artificial sequence
464 <220> FEATURE:
466 <223> OTHER INFORMATION: Synthetic nucleotide
469 <400> SEQUENCE: 9
470 gcacattaga gaaccaccat
473 <210> SEQ ID NO: 10
475 <211> LENGTH: 20
477 <212> TYPE: DNA
479 <213> ORGANISM: Artificial sequence
482 <220> FEATURE:
484 <223> OTHER INFORMATION: Synthetic nucleotide
487 <400> SEQUENCE: 10
488 cttcacaaga atgaagatct
491 <210> SEQ ID NO: 11
493 <211> LENGTH: 20
495 <212> TYPE: DNA
497 <213> ORGANISM: Artificial sequence
500 <220> FEATURE:
502 <223> OTHER INFORMATION: Synthetic nucleotide
506 <400> SEQUENCE: 11
507 ttccatgcat tgtctatcat
510 <210> SEQ ID NO: 12
512 <211> LENGTH: 38
514 <212> TYPE: DNA
516 <213> ORGANISM: Artificial sequence

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**VERIFICATION SUMMARY**

DATE: 01/26/2006

PATENT APPLICATION: US/10/531,357A

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